NOTE: The Savannah River Operations Office (SRO) developed this study material in support of the Technical Qualification Program's Conduct of Assessment functional standard. It is added to this study guide for your convenience. This portion of SRO's study material supports Emergency Management competency 4.6. This file is an exact copy of the materials designed by SRO.

B.   Competency 1.1

Personnel in the following functional areas shall demonstrate a working level knowledge of assessments techniques (such as planning, evaluating, performing of interviews, and documenting reviews) to assess facility performance, report results, and follow up on actions taken as the result of assessments.

> **Facility Representative**   **Civil/Structural**
> **Technical Training**   **Safeguards & Security**
> **Radiation Protection**   **Electrical Systems**
> **Environmental Restoration**   **Instrumentation & Control**
> **Waste Management**   **Facility Maintenance Management**
> **Environmental Compliance**   **Construction Management**
> **Fire Protection**   **Mechanical Systems**
> **Occupational Safety**   **Chemical Processing**
> **Industrial Hygiene**
> **Nuclear Safety**

1.   Supporting Knowledge and Skills

    a.   Define the following types of assessments:

    •   Internal
    •   Self
    •   External (Independent)

    b.   List the responsibilities of personnel performing independent assessments.

    c.   For each type of assessment listed in B.1.a. above, define the following assessment approaches:

    •   Compliance
    •   Compliance plus effectiveness
    •   Performance based

    d.   Describe the following elements of conducting an assessment:

    •   Determining the Scope
    •   Preparing the Plan
    •   Conducting the Entrance Meeting
    •   Interview Process

- Evaluation Techniques
- Deficiency Identification
- Conducting the Exit Meeting
- Writing the Report
- Verification of Corrective Actions

e. Describe the Conflict Management techniques to be used if the contractor challenges the assessment findings and conflict arises.

2. Self-Study Information

Competency 1.1 addresses assessment techniques for personnel to assess facility performance, report results, and follow up on actions taken as a result of the assessment. To support the review and understanding of the competency, Supporting Knowledge and Skills and Self-Study Information has been developed. The Self-Study Information specifically addresses those areas needed for understanding the competency. The supporting material for the Self-Study Information include the following documents:

- DOE Order 5700.6C, Quality Assurance
- "Performance Based Assessments", by Paul F. Wilson and Richard D. Pearson
- "Project Management, A Systems Approach to Planning, Scheduling, and Controlling",
- Third Edition, by Harold Kerzner, Ph.D.
- Student Manual of the Savannah River Site Lead Assessor/Auditor Training course, number
- QAT115

Assessments

There are three recognized types of assessment: a. Internal, b. Self, and c. External (also known as Independent).

a. Internal assessments are those performed by persons within the group or organization. Internal assessments do not offer the same objectivity as independent assessments.

b. Self Assessment is the evaluation of an individual, group, or organization by that entity itself. Self Assessments are done on a routine, periodic basis.

c. External (Independent) assessments are those conducted by someone other than the individual, group, or organization. An example of an independent assessment would be an assessment conducted by a regulatory agency. The advantage of an independent assessment is that the assessor is not associated with the actual process or activity.

Responsibilities

The responsibilities of personnel performing independent assessments are to monitor work performance, identify abnormal performance and potential problems, identify opportunities for improvement, report results to a level of management having the authority to effect corrective action, and verify satisfactory resolution to problems.

Approaches

There are three approaches to the types of assessments listed above, a. Compliance, b. Compliance plus Effectiveness, and c. Performance Based.

a.   Compliance approach is the evaluation of items, processes, or activities against predetermined requirements.

b.   Compliance plus Effectiveness is an analysis focusing on the product, process, and system to determine if suitable requirements were imposed and implemented, resulting in a product which meets client expectations. This type of approach is better than the previous in that the terms "suitable requirements" and "which meets client expectations" are more restrictive and definitive.

c.   Performance Based assessments are merely a logical extension of the compliance plus effectiveness concept. Performance Based assessments provide additional focus toward client expectation, better practices, and process refinement. Performance Based relates to the outcome/result of an activity or process through direct observation and evaluation against defined requirements.

Elements of an Assessment

There are nine essential elements of conducting an assessment.

a.   Determining the Scope involves defining the boundaries for an evaluation. The following are factors to be considered when determining the assessment boundaries:

•   QA Systems- Refer to the 10 criteria of DOE Order 5400.6C, or the QA Manual of the facility being assessed.

•   Organizational Entities- Management personnel that have the responsibilities within the evaluation topic.

•   Locations- Physical area where assessment items exist.

- Programs and Activities- Types of programmatic and work processes.

- Hierarchy of Procedures- The level of procedures that are used to determine performance during the assessment.

- Calendar Time- The time allotted for an assessment. Time can affect the population to be assessed. Compliance and performance based assessments use some prior time up to the present.

b.   Preparing the plan includes: scheduling the organization to be assessed, dates of the assessment, team member identification, purpose and scope of the assessment, arrangement for the entrance meeting, necessary escorts, and exit meeting.

c.   Conducting the entrance meeting involves the Team Leader introducing the participants, describing planned assessments, identifying points of contact, arranging for periodic briefings of the organizations being assessed, soliciting and answering questions, and arranging for the exit meeting.

d.   The interview process is a free exchange of information. It is during this time that a positive, cooperative climate is established. The types of questioning include: open, closed, probing, and leading/loaded. Open questions are used to obtain general information, closed questions are used to obtain specific information, probing questions are used to obtain clarifying or additional information. Leading and loaded questions are to be avoided.

e.   Evaluation techniques are essential because they provide the means to determine acceptability. The techniques include: 1) Traceback, 2) Tracethrough, 3) Comparison, and 4) Reinspect/Retest.

1)   The Traceback method involves selecting samples from end results, tracing backwards through the activities that produced the results, evaluating each step of the activity, and continuing such an evaluation to the upper tier requirement.

2)   The Tracethrough method begins with the evaluation starting with the commitment of the upper tier requirement, tracing through the control model/standard, and evaluating each step until arriving at an end result.

3)   The Comparison method compares "from a requirement" to "the object of that requirement". It determines acceptability in terms of compliance with the requirement. Comparison always compares from the requirement to the object of the requirement. Because comparison determines acceptability, it is highly useful.

4) The Reinspect/Retest technique requires the evaluation team to reinspect/retest the product, compare results with those obtained by the initial inspection/test, and explore the differences that are beyond expected repeatability.

f. Deficiency identification describes the deficiency. A deficiency is a variance from a requirement. Deficiencies may be symptomatic, systematic, or inadvertent. Deficiencies that affect product quality, health, equipment reliability, and commitments to governmental agencies should be promptly reported to the contractor or DOE management.

g. Conducting the exit interview is important because it verbally summarizes the assessment. The exit meeting should identify participants, discuss assessment results, deficiencies, items of concern, questions from the assessed organization, and subsequent schedule of events.

h. Writing the report is documenting the result of an assessment. The purpose of a report is to provide documentation necessary to support findings and concerns identified by the assessor(s). The report should clearly state the status of reviewed areas and act as the reference for future discussions regarding corrective action plans.

Each assessment report will be unique, depending on the scope and results of the assessment. An example of a typical assessment report is shown in DOE Standard DOE-STD-1070-94 and DOE Standard DOE-STD-3006-93 and includes the following sections:

1) Cover Page
2) Summary
3) Background
4) Description of Assessment
5) Results and Recommendations
6) Conclusion

i. Verification of corrective actions consists of the following elements: correction of reported items, correction of identical items, identification of error cause, and action to prevent recurrence. A tracking system is a useful tool to track the identification of an open item as well the completion status. Without tracking the status, a high probability exists that some necessary steps will not be taken because of the many actions involved.

Developing an Assessment Report

When developing an assessment report the writing process consist of three stages: a. Planning, b. Drafting, and c. Reviewing.

a.   Planning- The most important stage of the writing process. During this stage, critical decisions are made about the messages and how to develop and organize the messages. The end goal is to develop an outline that clearly and concisely conveys the message(s) to the organization. Such planning provides a road map for developing the written product.

b.   Drafting- During the drafting stage, the assessor writes the report using the results of the planning stage. In writing the report, the deductive style should be used and each paragraph should have focus and flow

      In using the deductive style, a general statement or conclusion is stated first, and then supporting information is added. The supporting information should be sufficient to prove the point of the general statement or conclusion.

c.   Reviewing- Consists of examining the written product. This examination should confirm that the written message is the intended message and that it is presented clearly and concisely. Review techniques include: time between drafting and reviewing, use of a cold reader, reading aloud, and focusing on paragraphs and sentences.

Conflict Management

Conflict is defined as that condition which will exist when two or more independent parties interact. Sources of conflict are: a. Individual factors, b. Organizational issues, and c. Communication. The sources of conflict are briefly described below:

a.   Individual factors include: background, social style, perceptions, and feelings.

b.   Organizational issues include: scarcity of resources, ambiguity over regulation, competition, and exceptions.

c.   Communication conflicts can arise from problems with sender, media, and receiver.

Conflict management is defined as the process of identifying, directing, and controlling the collection of factors that result from and contribute to conflict. Stage 1 of conflict management is defining the conflict. Stage 2 is negotiating an agreement. Stage 3 is summarizing and reviewing. Once the conflict has been identified and it is determined that a meeting is necessary, the following conflict management techniques can be applied:

- Pause and think before reacting
- Keep the meeting under control
- Listen to all parties
- Maintain a give and take attitude
- Educate others tactfully
- Be willing to acknowledge when you are wrong

3.   References

NOTE: For information regarding the Supporting Knowledge and Skills refer to the Self-Study Information section of this competency.

    a.   For Supporting Knowledge and Skills B. 1 .a. refer to the book "Performance Based Assessments", by Paul F. Wilson and Richard D. Pearson, Chapter 3, Section titled <u>External, Internal, and Self-Assessments</u>, pages 49-51.

    b.   For Supporting Knowledge and Skills B.l.b. refer to DOE Order 5700.6C, Quality Assurance, and review the Quality Assurance Program Implementation Guide, Part II, Section C.2b.

    c.   For Supporting Skills and Knowledge B. 1 .c. refer to the book "Performance Based Assessments", by Paul F. Wilson and Richard D. Pearson, Chapter 3, titled Features of Assessment Activities. Compliance is described on page 41, Compliance plus Effectiveness is described on page 42, and Performance-Based is described on pages 42 and 43.

    d.   For Supporting Knowledge and Skills B.l.d. refer to the Savannah River Site Lead Assessor/Auditor Training course, number QAT115. The following sections of the Student Manual from the above course describes the elements of conducting an assessment:

- Determining the Scope - Refer to Chapter 3, Section 3.1, Evaluation Scope Boundaries, Section 3.2.3, Scheduling By Program or Activity, and Section 3.3.4, Scope of Program and System Evaluations.
- Preparing the Plan - Refer to Chapter 4, Sections 4.0 through 4.9, Summary.

- Conducting the Entrance Meeting - Refer to Chapter 8, Sections 4.0 through 4.7, Summary.
- Interview Process - Refer to Chapter 6, Sections 4.0 through 4.7, Summary.
  - For additional information refer to Savannah River Implementing Procedure (SRIP) 5700.6.12B, SR Technical Assessment Program, Attachment B, Conduct of Field Personnel, or use applicable site documents.
- Evaluation Techniques - Refer to Chapter 9, Sections 3.6, Evaluation Techniques.
- Deficiency Identification - Refer to Chapter 10, Section 4.0, Summary.
- Conducting the Exit Interview - Refer to Chapter 13, Sections 4.0 through 4.5, Summary.
- Writing the Report - Refer to Chapter 14, Section 4.0 through 4.10, Summary. For report format refer to DOE-STD-1070-94, Guidelines for Evaluation of Nuclear Facility Training Programs, Section 7, Reporting Evaluation Results. Verification of Corrective Actions - Refer to Chapter 15, Sections 4.0 through 4.6, Summary. For additional information refer to DOE-STD-1070-94, Guidelines for Evaluation of Nuclear Facility Training Programs, Section 8, Tracking Evaluation Results.

e. For Supporting Knowledge and Skills B. l .e. refer to:

The textbook "Project Management, A Systems Approach to Planning, Scheduling, and Controlling", Third Edition, by Harold Kerzner, Ph.D., Chapter 7, Section 6, The Management of Conflicts. For additional information refer to the Student Manual of the Savannah River Site Lead Assessor/Auditor Training course, number QAT115, Chapter 7, Section 4.0 through 4.9, Summary.

f. For information regarding the assessments concerning Operational Readiness Reviews refer to DOE-STD-3006-93, Planning and Conduct of Operational Readiness Review, and DOE HDBK-3012-94. Team Leader's Preparation Guide for Operational Readiness Review.

4. Practice Exercise

a. State the three (3) types of assessments. (K&S B.l.a.)

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b.   Which type of assessment provides the highest amount of objectivity? Why?
(K&S B. 1 .a.)

c.   In addition to monitoring work performance and identifying abnormal performance and potential problems, what three other responsibilities does a person performing assessments have? (K&S B.l.b.)

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d.   Describe the "Performance based" assessment approach. (K&S B.l.c.)

e.   List and describe four (4) factors that must be considered when "determining the scope" of an assessment. (K&S B.l.d.)

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f.   Concerning the use of Hierarchy of Procedures factor, how can the procedures be used effectively to determine the scope of an assessment? (K&S B. 1 .d.)

g.   Which types of questions are NOT used during the interview process of an assessment? Why? (K&S B. 1 .d.)

h.   Which evaluation technique is used to test the differences that are beyond expected repeatability? (K&S B.l.d.)

i.   List the six (6) sections of a typical assessment report. (K&S B.l.d.)

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j.   What are the three stages of conflict management? (K&S B.l.e.)

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k.   For each of the following conditions: (K&S B.l.e.)
          1)   Determine if it is a possible source of conflict.
          2)   If yes, classify source of conflict.
          3)   Suggest a method of overcoming the problem.

Condition	Source of Conflict (Y/N)	Type of Conflict	Method of Overcoming
1. Team conducting assessment managed by first time team leader.			
2. Person conducting assessment responsible for developing procedure being assessed.			
3. Report generated using new procedure and format.			
4. Person generating report under pressure to complete report with fast turn around time.			
5. Person receiving report up all night with sick child.			

5.   Training-to-Competency Matrix for Competency 1.1

Related courses:

Course Title/Number	Length (hours)	Source
Performance Based Assessor Skills/QFPS 1000 Rev. 0	16	Westinghouse Savannah River Corporation
Fundamentals of Auditing Techniques/QAT 116	16	General Physics Corporation
Lead Assessor/Auditor Training/QAT 115	40	General Physics Corporation

Other activities that address competency requirements:

Activity Type	Activity	Source
Self-Study	Textbook - Performance Based Assessments	Published by American Society of Quality Control (ASQC)
Self-Study	Textbook - Project Management, A Systems Approach to Planning, Scheduling, and Controlling	Published by Van Nostrand Reinhold

6.   Practice Exercise Answers

a.   State the three (3) types of assessments. (K&S B.l.a.)

•   Internal

•   Self

•   External (also known as Independent)

b.   Which type of assessment provides the highest amount of objectivity? Why?
(K&S B.1.a.)

External (Independent) assessments offer more objectivity. These assessments are those
conducted by someone other than the individual, group, or organization. The advantage of
an independent assessment is that the assessor is not associated with the actual process or
activity.

c.   In addition to monitoring work performance and identifying abnormal performance and
potential problems, what three other responsibilities does a person performing independent
assessments have? (K&S B.l.b.)

- Identify opportunities for improvement

- Report results to a level of management having the authority to effect corrective
action

- Verify satisfactory resolution to problems

d.   Describe the "Performance based" assessment approach. (K&S B.l.c.)

Performance Based assessments are merely a logical extension of the compliance plus
effectiveness concept. Performance Based assessments provide additional focus toward
client expectation, better practices, and process refinement. Performance Based relates to
the outcome/result of an activity or process through direct observation and evaluation
against defined requirements.

e.   List and describe four (4) factors that must be considered when "determining the scope" of
an assessment. (K&S B.l.d.)

Any four of the following

- QA Systems- Refer to the 10 criteria of DOE Order 5400.6C, or the QA Manual
of the facility being assessed.

- Organizational Entities- Management personnel that have the responsibilities
within the evaluation topic.

- Locations- Physical area where assessment items exist.

- Programs and Activities- Types of programmatic and work processes.

- Hierarchy of Procedures- The level of procedures that are used to determine performance during the assessment.

- Calendar Time- The time allotted for an assessment. Time can affect the population to be assessed. Compliance and performance based assessments use some prior time up to the present.

f. Concerning the use of Hierarchy of Procedures factor, how can the procedures be used effectively to determine the scope of an assessment? (K&S B.l.d.)

The level of procedures that are used to determine performance during the assessment.

The experience, review of prior evaluation reports, review of procedure indexes and discussion with management can be used to determine the scope of an QA System assessment.

For assessments by Organizational Entities, the procedures need to be researched. Upper-tier procedures should be used in planning the evaluation and lower-tier procedures should be used in performing the evaluation.

(See Savannah River Site Lead Assessor/Auditor Training Student Manual Chapter 3)

g. Which types of questions are NOT used during the interview process of an assessment? Why? (K&S B.l.d.)

Leading and loaded questions are to be avoided. Using leading and loaded questions prevent the free exchange of information.

(For additional information see Lead Assessor/Auditor Training Student Manual Chapter 6 section 3.9)

h. Which evaluation technique is used to test the differences that are beyond expected repeatability? (K&S B.l.d.)

The Reinspect/Retest technique requires the evaluation team to reinspect/retest the product, compare results with those obtained by the initial inspection/test, and explore the differences that are beyond expected repeatability.

    i.   List the six (6) sections of a typical assessment report. (K&S B.1.d.)

- Cover Page
- Summary
- Background
- Description of Assessment
- Results and Recommendations
- Conclusion

    j.   What are the three stages of conflict management? (K&S B.l.e.)

- Defining the conflict

- Negotiating an agreement

- Summarizing and reviewing

    k.   For each of the following conditions: (K&S B.l.e.)

        1)   Determine if it is a possible sources of conflict.
        2)   If yes, classify source of conflict.
        3)   Suggest a method of overcoming the problem.

Condition	Source of Conflict (Y/N)	Source of Conflict (Type)	Method of Overcoming
1. Team conducting assessment managed by first time team leader.	POSSIBLE	INDIVIDUAL ORGANIZATIONAL	Possible perception of evaluated organization that the new leader is not capable/effective at performing the task. Less experienced people often regarded negatively. Ensure leader is trained and experienced in performing assessments. Separate people from the problem. Identify and address individual problem areas rather than large generalizations. Separate feelings from reality.

Condition	Source of Conflict (Y/N)	Source of Conflict (Type)	Method of Overcoming
2. Person conducting assessment responsible for developing procedure being assessed.	NO	NONE	NONE
3. Report generated using new procedure and format.	YES	COMMUNICATION	Ensure that all personnel involved with process understand the new procedure and format. Provide objective evidence with validity of new process.
4. Person generating report under pressure to complete report with faster turn around time.	YES	INDIVIDUAL ORGANIZATIONAL	Personnel with perception that more is required of them may react negatively. Justify the shorter time frame expected for the report. Validate the feasibility of the time. Consider negotiating an acceptable time. Scarcity of resources is potential organizational issue leading to conflict. Time is a valuable resource. Ensure that adequate time is available for accomplishing assigned tasks.
5. Person receiving report up all night with sick child.	POSSIBLE	INDIVIDUAL	Personnel that are fatigued may be unreceptive to perceived criticism, ensure that all comments are objective and can be supported.